

AMENDMENTS TO THE CLAIMS

The listing of claims below replaces all prior versions and listings of claims. Only those claims being amended herein show their changes in highlighted form, where insertions appear as underlined text (e.g., insertions), while deletions appear as strikethrough text (e.g., ~~deletions~~) or enclosed in double brackets (e.g., ~~[[deletion]]~~).

1-90. (Canceled)

91. (Currently Amended) A method of applying a radial force against a surface of a passageway with an expandable device, comprising:

providing an expandable device with a plurality of cells comprising a generally longitudinal wave-like first member and a generally longitudinal wave-like second member, at least one cell capable of being expanded between a stable contracted state in which the first and second members are generally in phase and ~~[[a]]~~ at least one stable expanded state in which the first and second members are generally out of phase; and

radially expanding the expandable device against a surface of the passageway such that the at least one cell is expanded from the stable contracted state to the at least one expanded state;

wherein

~~each cell comprises a generally longitudinal wave-like first member and a generally longitudinal wave-like second member; ~~[[,]]~~~~

~~the first and second members are being generally in phase when the cell is in an unexpanded state and generally out of phase when the cell is in an expanded state~~

one of the first and second members substantially retains its shape when the cell transitions from the contracted to the expanded shape.

92. (Previously Presented) The method as recited in claim 91, wherein the step of radially expanding comprises expanding the plurality of cells without substantial axial shortening of the expandable device.

93. (Previously Presented) The method as recited in claim 91, wherein the expandable device comprises a tubular member.

94. (Previously Presented) The method as recited in claim 91, wherein the expandable device comprises a liner.

95. (Previously Presented) The method as recited in claim 91, wherein the expandable device comprises thick struts coupled to thin struts.

96-112. (Canceled)

113. (Currently Amended) A method of stabilizing an unsupported section of a passageway, comprising:

providing an expandable device having one or more cells, each of the cells comprising first and second arcuate members;

placing the device at a position in the passageway while in a first stable state;

applying a radially outward force to the expandable device~~[[;]]~~ to expanding
expand the one or more cells to a transition point defining a geometry of the one or more cells at which no additional force is necessary to further expand the one or more cells;
and

permitting the one or more cells to continue to expand beyond the transition point without the application of additional force;

wherein at least a portion of the first arcuate member changes from a ~~[[is]]~~
generally concave shape to a generally convex shape when ~~before the one or more cells~~
~~has been expanded and at least a portion the first arcuate member is generally convex~~
~~after the one or more cells~~ expand ~~has been expanded~~ beyond the transition point.

114. (Previously Presented) The method as recited in claim 113, further comprising attaching a wrapping to the outer surface of the device.

115. (Previously Presented) The method as recited in claim 114, wherein attaching comprises attaching an expandable material.

116. (Previously Presented) The method as recited in claim 113, further comprising applying a deformable material to the outer surface of the device.

117. (Previously Presented) The method as recited in claim 116, wherein applying comprises applying an elastomeric material.

118. (Previously Presented) The method as recited in claim 113, further comprising expanding the device to a first stable size and a second stable size.

119. (Currently Amended) A method for installing a liner within a tubular passageway, comprising:

providing an expandable device with a plurality of bistable cells, each of the bistable cells comprising first and second arcuate members, each cell being capable of assuming a stable collapsed configuration in which the first and second arcuate members are in phase and being capable of isothermally expanding to a stable expanded configuration in which the first and second arcuate members are out of phase, the expandable device having a generally tubular shape; and

~~surrounding the expandable device with~~ supporting an expandable liner element ~~attached to an outer surface of~~ with the expandable device.

120. (Previously Presented) The method as recited in claim 119, further comprising:

placing the expandable device at a position within the tubular passageway while in a first stable state; and

expanding the expandable device into a second stable state to hold the liner element against an inner diameter of the tubular passageway.

121. (Previously Presented) The method as recited in claim 119, wherein the first arcuate member comprises a thin strut and the second arcuate member is a thick strut.

122. (Currently Amended) A method of isolating a portion of a passageway, comprising:

inserting within the passageway an expandable multistable device formed by one or more of cells that permit the expandable device to be selectively actuated between a contracted state and at least one expanded state, each of the cells comprising first and second wave-like portions;

expanding the one or more cells from a stable collapsed configuration in which the first and second wave-like portions are in phase to a stable substantially completely expanded configuration, in which the first and second wave-like portions are out of phase, wherein there are no stable configurations between the stable collapsed configuration and the stable expanded configuration; and

isolating a portion of the passageway with the expandable device.

123-126. (Canceled)

127. (Currently Amended) The method as recited in claim 122, wherein the first and second wave-like portions ~~arcuate members~~ each comprise a wave shape in the contracted state.

128. (Previously Presented) The method as recited in claim 122, wherein the step of expanding occurs without substantial axial shortening of the expandable multistable device.

129. (Currently Amended) The method as recited in claim 122, wherein the first wave-like portion ~~arcuate member~~ is more flexible than the second wave-like portion ~~arcuate member~~.

130. (Currently Amended) A method of expanding an expandable device in a passage way, comprising:

providing an expandable device having at least one cell, the at least one cell comprising first and second members, at least a portion of the second member(s) being more pliable than the first member(s);

positioning the expandable device in a passage way;

applying a radially outward force to the expandable device to [[;]] ~~expanding~~ expand the at least one cell to a transition point of the at least one cell defining a geometry of the at least one cell beyond which no additional force is needed to further expand the least one cell, at least a portion of the at least one cell moving between a generally concave state and a generally convex state at the transition point; and

permitting the at least one cell to continue to expand beyond the transition point without the application of additional force.

131. (Previously Presented) The method as recited in claim 130, wherein each of the second members comprise a wave shape in the first stable position.

132. (Previously Presented) The method as recited in Claim 130, wherein the step of expanding comprises expanding the expandable device radially outward.

133. (Previously Presented) The method as recited in Claim 130, wherein the expandable device is a medical device.

134. (Previously Presented) The method as recited in Claim 91, further comprising inserting a portion of the expandable device into a body of a patient.

135. (Previously Presented) The method as recited in Claim 113, further comprising inserting a portion of the expandable device into a body of a patient.

136. (Previously Presented) The method as recited in Claim 119, further comprising inserting a portion of the expandable device into a body of a patient.

137. (Previously Presented) The method as recited in Claim 122, wherein the passageway is in a body of a patient.

138. (Previously Presented) The method as recited in Claim 130, further comprising inserting a portion of the expandable device into a body of a patient.

139. (Previously Presented) The method as recited in Claim 113, wherein the device has a generally tubular shape.

140. (Previously Presented) The method as recited in Claim 119, further comprising locating multiple bistable devices in the passageway such that the ends of the adjacent bistable devices overlap and form a continuation of the liner element against the inner diameter of the tubular passageway.

141. (Previously Presented) The method as recited in Claim 113, wherein the device is a single unit cell device.

142. (Canceled)

143. (Previously Presented) The method as recited in Claim 91, wherein at least one cell is capable of being expanded between a stable contracted state and a stable expanded state without any stable configurations between the stable contracted state and the stable expanded state.

144. (Previously Presented) The method as recited in Claim 119, wherein each cell is capable of assuming a stable collapsed configuration and a stable expanded configuration without any stable configurations between the stable collapsed configuration and the stable expanded configuration.

145. (Previously Presented) The method as recited in Claim 130, wherein at least one of the first and second members comprises an arcuate shape.

146. (Previously Presented) The method as recited in Claim 145, wherein at least one second member comprises a plurality of generally rigid interconnected members.

147. (Previously Presented) The method as recited in Claim 130, wherein at least one second member comprises one or more hinges.

148. (Previously Presented) The method as recited in Claim 130, wherein at least one second member comprises three generally linear portions, the three generally linear portions cumulatively forming either a generally concave shape or a generally convex shape.

149. (Previously Presented) The method as recited in Claim 130, wherein at least one second member comprises a plurality of generally rigid interconnected members.

150. (New) The method as recited in claim 91, wherein, during isothermal expansion from the stable contracted state to the at least one stable expanded state, at least one cell passes a transition point that allows the radially outward force to be decreased.

151. (New) The method as recited in claim 91, wherein one of the first and second members is generally flexible and the other of the first and second members is generally rigid.

152. (New) The method as recited in claim 113, wherein the first arcuate member is generally flexible and the second arcuate member is generally rigid.

153. (New) The method as recited in claim 119, wherein the first arcuate member is generally flexible and the second arcuate member is generally rigid.

154. (New) The method as recited in Claim 119, further comprising expanding one or more of the plurality of bistable cells from the stable collapsed configuration to a transition point defining a geometry of the cells at which no additional force is necessary to further expand the cell to the stable expanded configuration.